Epsio Paint

USER GUIDE

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Last Update: October 24, 2014

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Introduction

Epsio Paint *... just add sports knowledge*

Epsio Paint is a commentator analysis tool. It is very quick and easy to use as well as highly appreciated by football experts and commentators from several countries and broadcasting organizations. It is the special video writing tool, allowing presenters to clearly explain by drawing, pointing, placing and moving graphics over video in real time.

Epsio Paint comes with a comprehensive set of tools for visualizing different parts of the play or highlighting individual player performance. The tools feature freehand drawing as well as clarifying highlights, zooming and marking tools. The look and feel of all inserted objects can be customized using standard image editing software and the built-in tool set editor to make Epsio Paint analyzes aligned with the overall graphic concept of your broadcast.

Installation

Operating System

Epsio Paint is certified for following operating systems:

- Microsoft Windows 7 Professional x64

NVIDIA Display Drivers

Epsio Paint requires installed NVIDIA display drivers.

Card Type	Drivers
Quadro 2000, 4000, 5000, 6000 Quadro K2000, K4000 Quadro K5000, K6000	332.50

NVIDIA website**:** http://www.nvidia.com

Setting

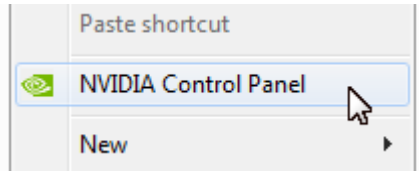
NVIDIA graphics drivers must be properly configured for running Epsio Paint.
Open Control Panel-Display-Settings and set Color quality to 32 bits. Driver setting is done automatically using NVIDIA applications profile for Epsio Paint during application installation.

Important

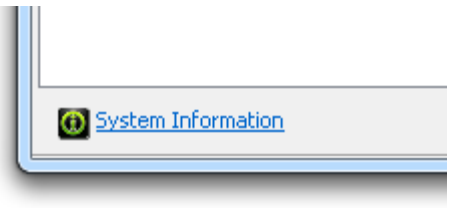
You must reinstall Epsio Paint after upgrading or reinstalling NVIDIA driver!

How to know what is the current driver version

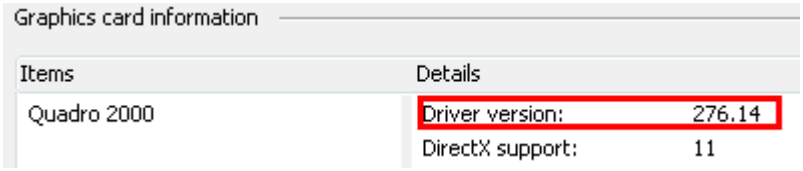
- Do right mouse click on empty desktop. A popup menu appears. Select "NVIDIA Control Panel".



- Click "System Information" in the left-bottom corner:



- Read the GPU name in the left column and driver version in the right column.

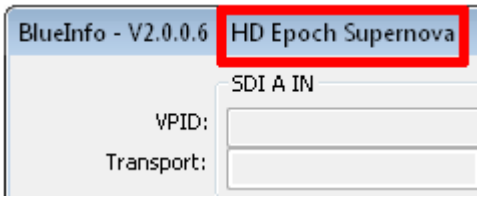


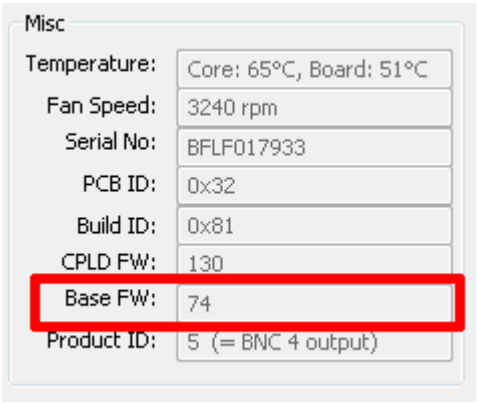
Bluefish444 Video Card drivers

Following Bluefish cards are supported:

Bluefish card	Recommended driver
Supernova (all variants)	5.11.0.9, firmware 108

If you are not sure which video card is installed or which firmware version is programmed then start application BlueInfo.exe. In the left top corner you find all the info.
This application is distributed together with Bluefish444 drivers. Stored in subfolder "bin" under program main folder.

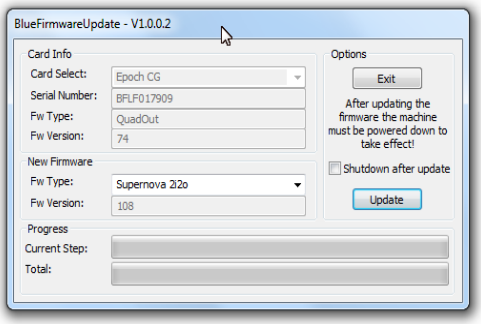




Supported video formats are: SD 576i 50, SD 486i 60M, 1080i 50, 1080i 60M, 720p50, 720p60M.

Updating firmware

If the current firmware is not the approved then please flash the correct one. The firmware is always bundled together with the driver. See folder "Firmware". The firmware is stored in a self-containing EXE file that can be run on Windows (such as `SuperNovaFirmwareUpdate_2i2o_094.exe`). To flash the firmware, run the particular flash EXE file. It opens a window where you can choose the video card (if you have more then one) and it shows the current firmware loaded. Press "Update" to flash the new firmware. After the process is completed you must power off the computer. Be sure you unplug the power cable or switch off the computer by hard switch for 10 seconds.



Bluefish SuperNova S+

Cable connections

Not used

SDI Output

SDI Input

Not used

Not used

Genlock Input

Software Installation

To install Epsio Paint please run EpsioPaintSetup<*version*>.exe
This installer will guide you through the installation process.
The installer also installs Java SE, SafeNet license dongle driver and Bluefish444 driver.

License

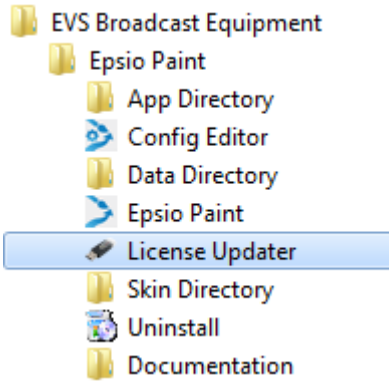
The license is programmed into the Sentinel USB dongle. The dongle is required to run Epsio Paint and it has to be present during the application operation. Removing the key can shutdown Epsio Paint.

Please insert dongle in a USB plug after successful installation of Epsio Paint.

License update

The hardware dongle can be updated in the field by a simple process where the necessary information is transferred over internet. If internet connection is not available please skip following section.

Internet connection available



- Start License Updater tool. It is located in Start menu
- A dialog will appear. It shows a serial number of the dongle with its current content.
- Press button “Yes” to start the update process. It takes couple of seconds.
- A dialog containing your new license details is shown in case of no error occurred.
- Press button “Yes” to confirm dongle update.
- A confirmation dialog appears. Press button “OK” to close this dialog.
- Your dongle is up to date now.

Internet connection not available

- Start License Updater tool. It is located in Start menu
- A dialog will appear. It shows a serial number of the dongle with its current content.
- Press button “Yes” to start the update process. It takes couple of seconds.
- A dialog with warning message about failed connection is shown. Press button “Yes” to save generated request file (*.hlr).

- Launch web browser on a machine with Internet connection and go to the

  http://da.chyronhego.com/dongle

  and follow the steps there.
- Start License Updater tool on machine with attached dongle again.
- A dialog will appear. It shows a serial number of the dongle with its current content.
- Press button “No” to browse the downloaded file (*.hlu).
- A dialog containing your license details is shown. Press button “Yes” to confirm dongle update.
- Your dongle is up to date now.

If you are still unable to run the application due to license issue please contact our technical support. The license server might not have correct information what license to program to your dongle.

XT settings

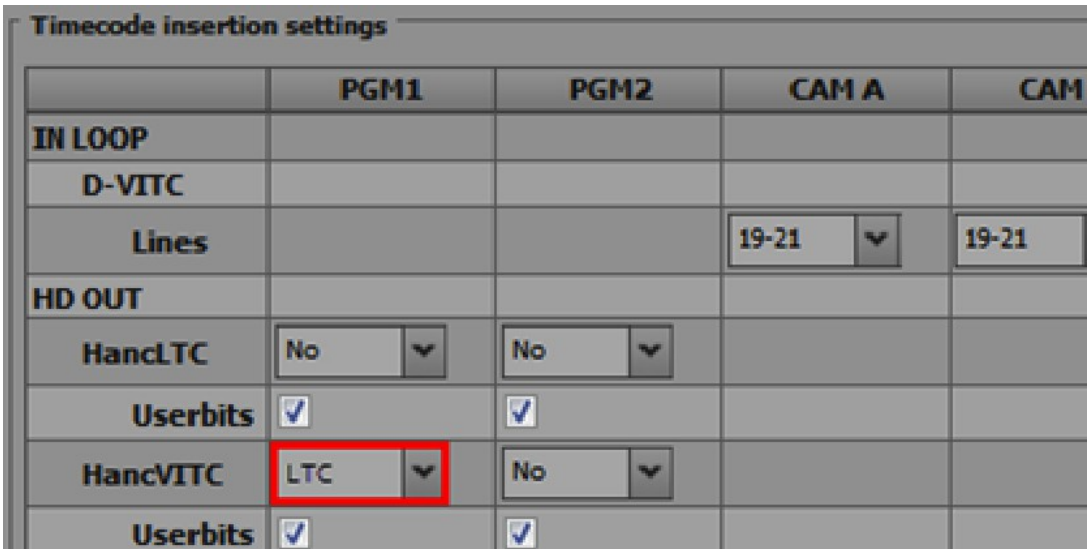
The PGM of the XT has to be routed to the Epsio Paint SDI IN. The XT must be setup to freeze on a cue point, to ensure that this is set correctly the following settings must be configured:

- Operational Setup page 2.2, set Mark on cue point : playback
- Operational Setup page 2.4 set Freeze on cue points : YES

(Page numbers may change according to Multicam version).

VITC Settings

To ensure correct playback of clips and drawings, LTC must be enabled, this is an example of where the setting can be found in the EVS Web Interface.



Getting started

The Look&Feel of the Epsio Paint is highly customizable. This is achieved by changing of the skin. Skin is all-in-one package which contains definition of all user controls and their layout on the screen . There are several skins coming with the application and they are automatically installed on your computer.
Current skin can be selected in the config editor. Each skin is designed for certain screen resolution, which is part of its name. Use only skins that are suitable for your screen resolution.

Workflow

At a given frame, when one or more tools have been selected and placed by the user, it is called an action. A set of tools defined to be displayed at the same time is called a group.

An action contains a list of tools and/or groups.

To create a telestration effect using the 'Mark' workflow, you must use the following steps

- Navigate to the correct frame from the LSM Remote
- Press “MARK” to add a cue point
- Select a Paint tool from the Paint UI
- You are able to use UNDO or CLEAR if needed.
- Add the tool in the video preview on Epsio Paint
- Save the drawings
- Upon re-calling the clip, the playback will stop at the point of the 'Mark' and the drawings will appear.

Creating a sequence.
To create a sequence where tools appear in groups on a single frame the following sequence When more than one tool for a given frame and presses the save icon, a new group of tool is added to the current action.

The group contains all the tools added since the last press on save for this current frame.

The following sequence is possible:

- Stop at a frame

- Add tool 1
- Add tool 2
- Press save (group 1 contains tool1 + tool2, the action contains one group)

- Add tool 3
- Press save (the action contains group 1 and tool 3)

- Add tool 4
- Add tool 5
- Add tool 6
- Press save (the group 2 contains tools 4,5,6, the action contains group 1, tool3 and group 3)

For more details see Action Editor below.

Administration menu

Menu items to change set of visible tools, clips etc. are available in the Administration popup menu. The menu is available from the Clear button.

Open the menu by

- Click right mouse button on the Clear button
- Hold you finger down on the clear button for few seconds.

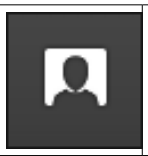
Exit Application

Close the application by selecting “Exit” item from the Administration popup on the “Clear” button.

Tools

There is a large set of predefined tools available after installation. Application window contains Tool palette, where you can place tools you wan to use. Tools can be added or removed in run-time.

Drawing controls

	Open chroma key dialog.
	Clear all the drawings. Open Administration Menu by - click the button by Right mouse button - hold your finger down on the button for few seconds

Tools Administration

Invoke Administration menu on the Clear button. Select the “Tools Administration” item. A dialog with list of predefined tools is opened. The dialog contains all tools installed on your computer.

Add tool to the palette

Open the Tool administration dialog. Drag selected from the administration dialog and drop it to the palette

Remove tool from the palette

Open the Tool administration dialog. Drag a tool the opposite direction back and drop it in the administration dialog.

Tool grouping

There's possibility to group tools, so it will be represented by one tool, but you can quickly change to another tool from the group.

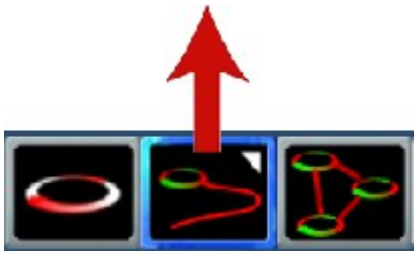
Create group

Open the Tool Administration dialog. Drag a tool from the Tool Administration dialog or Tool palette and drop it on an existing tool (drop location is middle part of the Tool button.). Group is created and expanded.

Expand group

There's a user gesture to expand the group. The gesture depends on tool layout:

Tools placement	Default Expand group gesture
Bottom	Drag up
Left	Drag right
Right	Drag left
Top	Drag down



Groups buttons are marked with a small group symbol in the corner of the button. Tools in group are numbered for better orientation.

Remove tool from group

Open the Tool administration dialog. Expand the group. Now drag the tool and drop it:

- to the administration dialog to remove the tool
- to the tool palette to make it permanently visible in the Tool palette

Add tool to existing group

Open the Tool administration dialog. Drag a tool form the Tool administration dialog or Tool palette and:

- Drop the tool in the middle part of a group button (as described in Create Group paragraph). The tool is appended to the group.
- During drag, park the cursor in the middle part of the group button for a while (~2 seconds), it makes the group expand. Then you place the tool at desired position.
- Expand the destination group. Drag the cursor and place it at desired position.

Change active tool in a group

Open the group. Select another another tool. The group is automatically closed and the tool is ready to use.

Tool Customization

The tools come ready to use. Most properties of the tool can be customize the tool in the run-time if needed. Mind, only the edited tool is changed. When the tool is removed, all changes are lost.
Invoke popup menu for the tool (right click or touch and hold for about 2 seconds) and select one of the following.

Tool keying

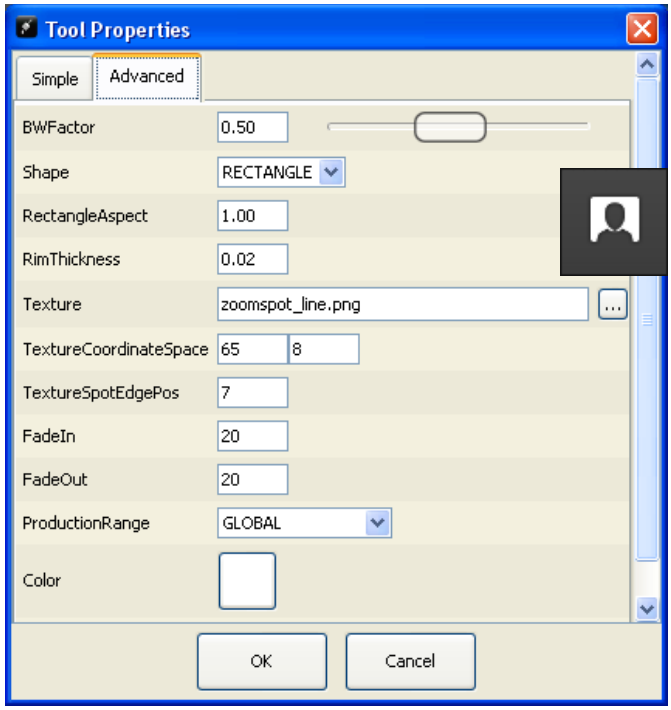
Epsio Paint tools can be chroma keyed. The popup menu command is available only when given tool supports the chroma keying. When using keyed tools, make sure the chroma key is properly set.

- On Chroma key enabled.
- Off Chroma key disabled.

Some tools support adaptive chroma keyer switch. When the key is missing at large portion of the video area where the tool is to be placed then the keyer gets disabled. Even when the menu setting shows On.

Tool Properties

Here you can find rest of the editable properties of the tool. All items have tooltips with short description.



Chroma Key

Press the chroma key button to open the chroma key dialog:

The dialog contains several buttons

Reset: Remove all current chroma key.

Undo: Restore the state before the very last pick.

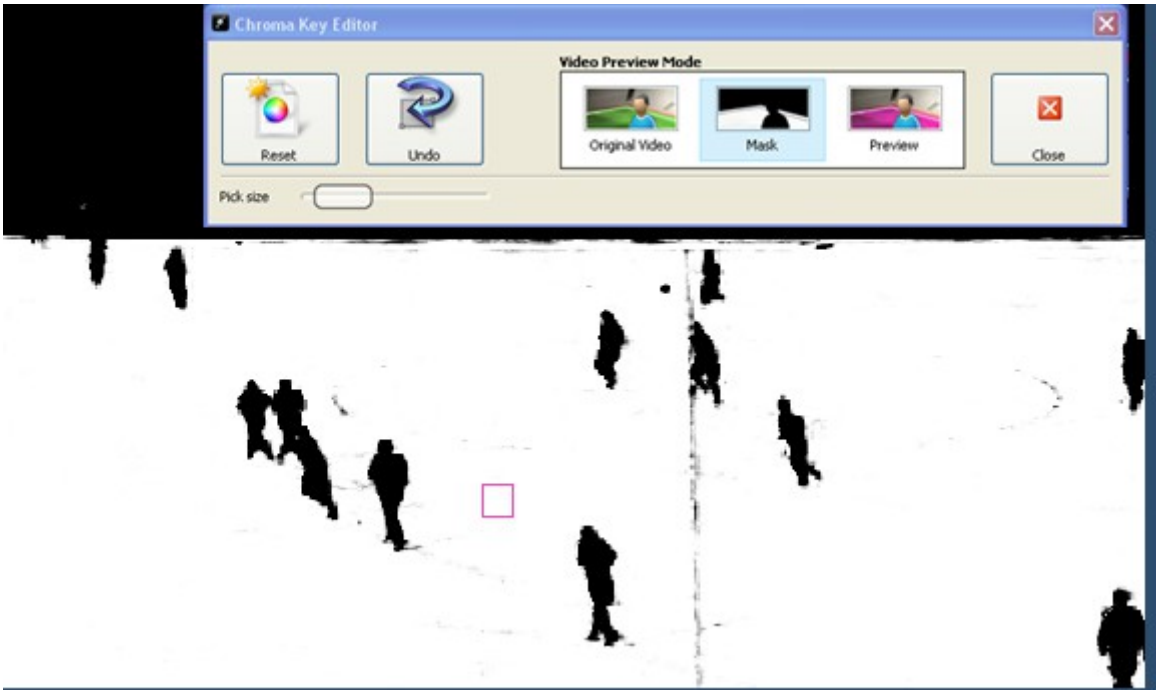
Original video: No chroma key visualization. In this option you see state before activation of the chroma key dialog. If there was any drawings, you can see them. This is useful to see the graphics with current key.

Mask: Show only the mask. The mask is black&white image. When the key is correctly set, you can see white pitch with sharp black pitch lines and outlines of the players.

Preview: Mix of mask and the original video. All the time, you can see the input video and preview of the mask.

The mouse cursor changes to a square defining the area, from which the chroma key is computed.

Select the area in the video to be keyed. Repeat this step until the mask fits. The mask should look like:



Adjust size of the pick area

Use the Pick size slider in the Chroma key dialog to adjust size of the pick area.

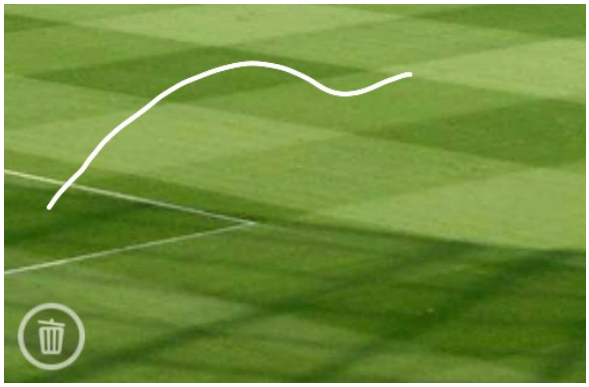
Action

The chroma key setting is stored in an Action. This allows to have every clip with a different chroma key setting.

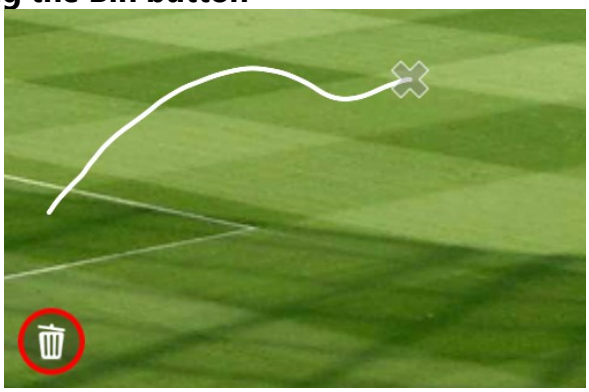
Stroke eraser

Graphics based on stroke (arrows, freehands etc.) can be removed by clicking the Erase button.
Erase button is not visible until the Bin button is clicked.

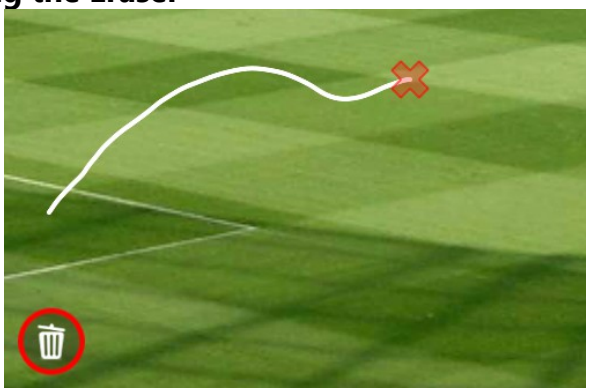
Create new graphic



Enable Eraser by clicking the Bin button

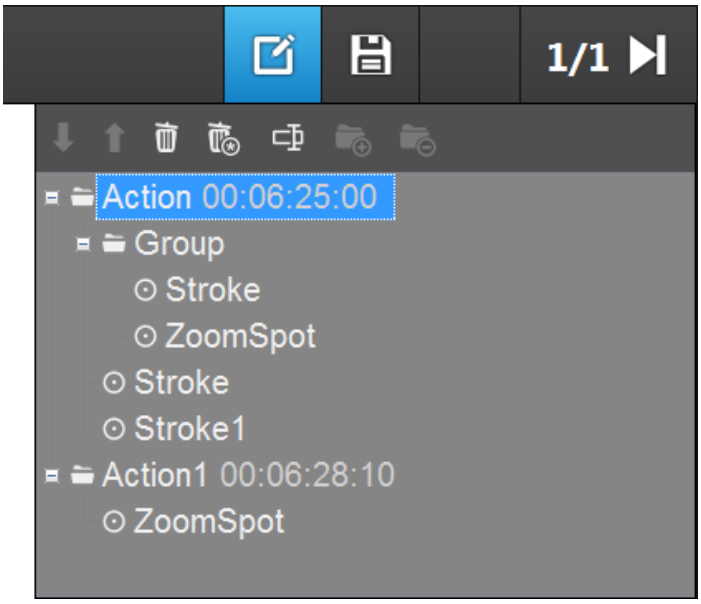


Erase graphic by clicking the Eraser



Action Editor

Action editor allows to edit the drawings you have created. Action editor displays all actions that belong to current Session. If you open the editor the action corresponding to current timecode is automatically selected.



Action

Action is set of graphic elements bound to certain timecode of the LSM timeline. Action can contain Tools and Groups of Tools (aka Action stages).
Group contains Tools that will appear together in the video. Non-grouped Tools are equal to groups with exactly one Tool.

Action editor contains following buttons:

Open/Close the Action Editor

Save currently drawn Tools into the Action

Move selected Group/Tool down within the action

Move selected Group/Tool up within the action

Remove selected Groups/Tools

Remove all Actions

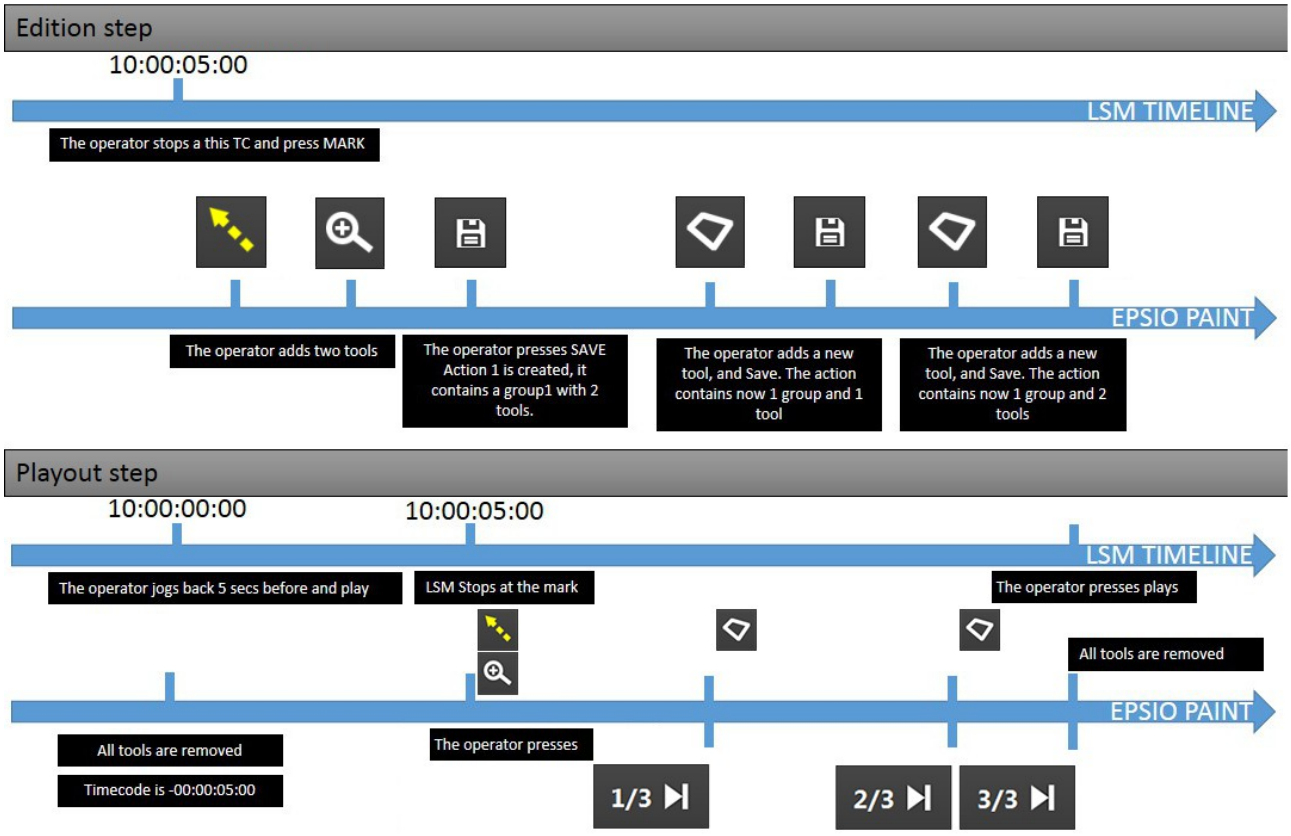
Rename selected Action/Group/Tool

Group selected Tool

Ungroup selected Tools

Next Stage button (with a Stage counter.) Press this button to show the next Action Stage. The counter displays current stage and stage count (e.g. 3/5 means there are 5 stages in the Action and you are on the 3rd of them). Pressing the Next button when you are at the last stage makes all drawings to fade out.

Edition & Playout timeline


Edition step
10:00:05:00
LSM TIMELINE
The operator stops a this TC and press MARK
EPSIO PAINT
The operator adds two tools
The operator presses SAVE Action 1 is created, it contains a group1 with 2 tools.
The operator adds a new tool, and Save. The action contains now 1 group and 1 tool
The operator adds a new tool, and Save. The action contains now 1 group and 2 tools
Playout step
10:00:00:00
10:00:05:00
LSM TIMELINE
The operator jogs back 5 secs before and play
LSM Stops at the mark
The operator presses plays
All tools are removed
EPSIO PAINT
All tools are removed
Timecode is -00:00:05:00
The operator presses
1/3
2/3
3/3

Session

Session contains Actions and Tools in the toolbar. Sessions are stored in a .pas in the path `C:\Users\<user>\Documents\EpsioPaint\` (also accessible via Start → Documents → EpsioPaint).

Create new Session

Open administration menu by right clicking on the Clear button and select 'New session...' item. This command will also clear the Toolbar.

Open Session

Open administration menu by right clicking on the Clear button and select 'Open session...' item. Select one of the available Sessions.

Save Session

Open administration menu by right clicking on the Clear button and select 'Save session as...' item. Specify name for the saved session. Toolbar and Actions won't be changed by the operation.

Licenses

FreeImage Public License - Version 1.0

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3.3. Description of Modifications.
You must cause all Covered Code to which you contribute to contain a file documenting the changes You made to create that Covered Code and the date of any change. You must include a prominent statement that the Modification is derived, directly or indirectly, from Original Code provided by the Initial Developer and including the name of the Initial Developer in (a) the Source Code, and
(b) in any notice in an Executable version or related documentation in which You describe the origin or ownership of the Covered Code.
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